Upon reception of the coded data stream, a demultiplexer separates the coded frequency bands, a decoder decodes the frequency bands and a synthesizing filter bank combines the frequency bands.

The subject invention, as claimed in claim 8, includes "receiving a first plurality of coded audio signals in separate channels, each coded audio signal having a second plurality of different frequency sub-bands"; "combining respective frequency sub-bands of the second plurality of sub-band of each of the first plurality of coded signals to form a third plurality of combined signals" and "synthesis filtering and decoding the third plurality of combined signals".

Applicants submit that, firstly, Ishino et al. neither discloses or suggests "a first plurality of coded audio signals in separate channels". Secondly, Applicants submit that since Ishino et al. is only concerned with a single coded audio signal, Ishino et al. then neither discloses or suggests "combining respective frequency sub-bands of the second plurality of sub-band of each of the first plurality of coded signals to form a third plurality of combined signals".

The Satoh et al. patent discloses a method for processing audio signals in a sub-band coding system, in which separate decoder units decode and separate each of a plurality of channels into at least two frequency bands. Each respective frequency band signal is applied to a corresponding mixing section for performing

an N-1 addition thereon. An output from each of the mixing sections is applied to a plurality of encoder units which combine the two frequency bands forming corresponding output channels. The Satoh et al. arrangement is for use in voice conferencing apparatuses, in which each input channel represents the voice input from each subscriber, while each output channel is directed back to the respective subscriber and includes the totality of the input channels less the contribution of the respective subscriber.

The subject invention, as claimed in claim 1, includes "signal supply means for supplying coded audio signals through several input channels, and for each input channel, through separate sub-channels covering distinct frequency sub-band domains", "synthesis or reconstruction filters for decoding and synthesizing audio signals over the total frequency domain covered by the sub-band domains" and "sub-band combination circuits, each sub-band combination circuit being supplied with audio signals through respective input channels which lie in one and the same sub-band frequency domain, while the output signals of a sub-band combination circuit covering an associated frequency sub-band are supplied to one of said synthesis filters for each output channel of said multi-channel audio signal processing device".

The Examiner now states that while Satoh et al. fails to disclose the synthesis filters for the combined signals in Fig. 7, therein, "In figure 3, the decoders include synthesis filters. It

would have be3en obvious to one of the ordinary skill in the art at the time the invention was made to modify the invention of figure 7 by implementing a synthesis filter for the purpose of reproducing the audio signal of the respective subbands."

Applicants submit that the Examiner is mistaken. In particular, while Satoh et al., in Fig. 3, and more particularly in Fig. 5A shows band synthesizing filters for combining the low-band and high-band signals of each decoder unit 12, Satoh et al. finds it necessary to "discard" the band synthesizing filters in each decoder unit 12a-12n in order to effect the combining being performed by the high-band and low-band mixing sections 101 and 102 (see col. 3, line 41 to col. 4, line 17. Since each output from the Satoh et al. system comes directly from an encoder unit 13a-13d for the respective subscribers, there is no place for re-inserting the synthesizing filters as suggested by the Examiner. Further, the re-insertion of the synthesizing filters would defeat the advantages of the Satoh et al. system.

The Examiner has indicated "AAPA discloses main-related filters or sound widening filter means (figure 1), wherein it obvious the filters can be position in varied location of an audio scheme."

The invention, as claimed in claim 2, includes "filter means coupled to inputs of the respective synthesis filters".

The main-related filters or sound widening filter means of Fig. 1 are described in the Substitute Specification on page 1, line 13 to page 2, line 3, wherein these filters are constructed as broadband filters. However, as described in the Substitute Specification on page 3, line 8 to page 4, line 5, the filter means, as claimed in claim 2, may be of a narrow-band type and may be of a simpler construction, in that it only needs to handle one of the frequency sub-bands as opposed to the entirety of the frequency band.

Further Applicants submit that the AAPA does not supply that which is missing from Satoh et al., i.e., "synthesis or reconstruction filters for decoding and synthesizing audio signals over the total frequency domain covered by the sub-band domains", in which the output signals of a sub-band combination circuit covering an associated frequency sub-band are supplied to one of said synthesis filters for each output channel of said multi-channel audio signal processing device.

In view of the above, Applicants believe that the subject invention, as claimed, is neither anticipated nor rendered obvious by the prior art, and as such, is patentable thereover.

Applicants believe that this application, containing claims 1-8, is now in condition for allowance and such action is respectfully requested.

Respectfully submitted,

by

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